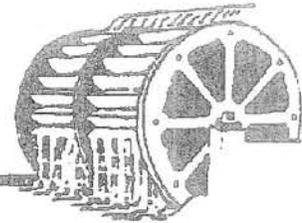


MILLWORK



Fall, 2001

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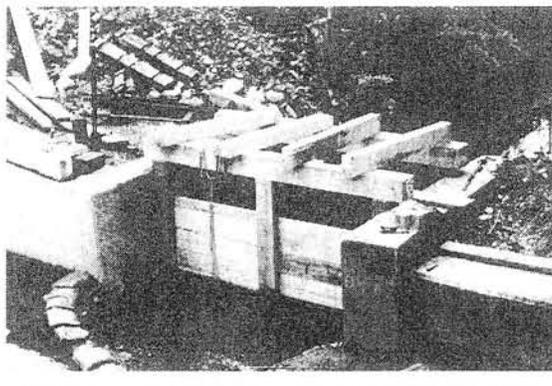
Vol. 15 - No. 2

Your Ideas and Dollars Help Power History at Work

We are coming to the end of a very dynamic year. This year, with the support of our friends, Hanford Mills Museum hosted ten outstanding special events, including welcome revivals of favorite events like the Antique Engine Jamboree and the return of the Lumberjack Show. Our education department hosted over 1,500 school children who participated in hands-on educational programs. The Museum offered over twenty intimate workshops designed to introduce audiences to a variety of traditional activities. And, we continued preservation-related projects around the site including work on the John Hanford House, research on "missing buildings" and ongoing preparation for the installation of a reproduction steam boiler in the Mill.

In early 2001, the museum's Board of Directors and staff also developed an ambitious Long Range Plan. As the museum's new director I am charged with guiding our staff and volunteers in enhancing the museum's programming

and interpretation, improving community outreach and promotions, completing capital projects



The headgate as it appeared when nearly completed. Next year, the museum will have to look into dredging the pond.

and fund raising to support all of these activities. And, as we look thoughtfully at all aspects of our operations - we'd like to hear what you think! This newsletter includes a brief survey - please take a few moments to complete and return it today.

This year, more than ever, your support is essential because the very generous support the museum has traditionally received from the

O'Connor Foundation is limited by law. The balance of our support *must* be raised from other sources.

We are turning to friends like you to help us to meet this fund raising challenge. The more you give, the more support we can leverage from the O'Connor Foundation and other funders.

Your financial support and your feedback make it possible for Hanford Mills Museum to continue as a premier historic site where visitors experience the power of history by exploring the history of power. In this season of giving please be generous with your time and opinions about the Museum by taking a moment to complete the survey on page two, and please consider donating to the museum's annual appeal, if you haven't already - a gift reply form can be found on page eleven.

Sincerely,

Elizabeth A. Callahan
Director



What's News?

Headgate Replaced - This Fall, James Kricker of Rondout Woodworking replaced the mill's badly damaged headgate. The all-wood headgate had been in place since the 1970s. It was built as a replacement for an even older headgate. In the last few years, the headgate has been damaged by ice flows and beaver. Of course, there has also been the normal deterioration that happens to wood over thirty years in the water. Since Hanford Mills is a museum that shows the past at work, the new gate is also constructed of materials similar to what the Hanfords used, specifically

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New Family Tool Box Activity Kit

by Sara Sikes

Hanford Mills Museum is pleased to announce the addition of *Family Tool Boxes* to our range of activities for children! The concept of the *Family Tool Box* was recently developed by Vesna Herbowy as a collection of self-guided, hands-on activities for use by families touring the museum. The intended audience of the exercises is families with children ages 7-12, and they are designed so at least one adult and one child can work together. As the family tours the Mill, John Hanford Farmhouse, Feedmill exhibits and the site, they can take along activities created for each particular location. By applying the information they have gathered

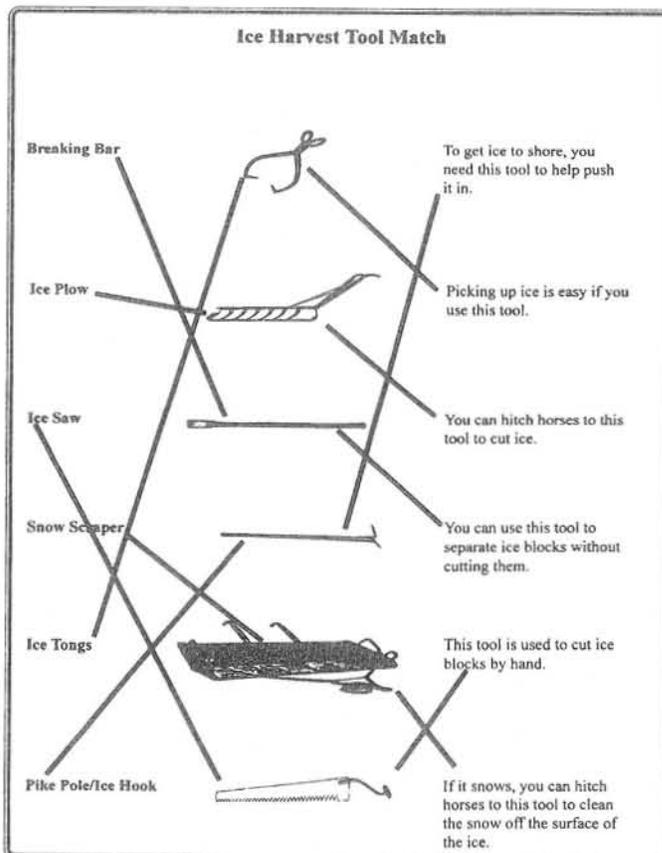
while at the museum, they will have a better understanding of water power systems, mill terminology, machines, tools and everyday implements at Hanford Mills.

Families can borrow the *Family Tool Box* when they pay for admission at the Briar Street Gift Shop. There is no additional charge for the use of the kit. The activities are contained in a mill-made wooden toolbox and can be carried with the family throughout the site. Each of the activity sheets are laminated, and erasable markers are provided for completing the exercises. Answers to the activities are provided on the back of each sheet. Visitors will also be supplied with a

page to take home and write a mock diary entry about their day at Hanford Mills Museum.

The basis for the educational structure of the activities is Howard Gardner's theory of Multiple Intelligences. Gardner's theory states that individuals possess different strengths in the way that they learn. He refers to these strengths as intelligences. Gardner has identified seven distinct intelligences: verbal/linguistic, musical, spatial/visual, kinesthetic, interpersonal, intrapersonal and logical/mathematic. An individual will best understand and retain new material if they are allowed to use their own personal learning style. The *Family Tool Box* includes opportunities for the visitors to learn through all seven of the intelligences. Included are the following activities: a "Sawdust Match", in which visitors use deductive reasoning to match three different samples of sawdust to the machines that produced them; a "John Hanford Farmhouse Innovations" worksheet, that has visitors match items found in the historic house to their modern day equivalent; and a "Water Flow" activity to determine the direction of water flow from the Kortright Creek to the Mill.

The *Tool Box* adds a family component to Hanford Mills Museum's already strong selection of special events for children, school programs and in-school artifact kits. The *Tool Box* also provides a wonderful opportunity for students in home school programs. Please contact the museum for additional information on any of our education resources or to schedule a school tour.



This is an example of one of the activities found in the Family Tool Box. These activities help families learn more about history and the museum together.



So you Want to Work for Mr. Hanford?

by Caroline de Marrais

Over the years we have introduced you to some of the men who worked at the mill in the past. You have learned about their families and what we know of their lives. You have even seen their faces from photographs in the Museum's collection. Despite all this information about workers, we rarely discuss the actual job of each employee. Unfortunately, specific workplace information is difficult to find at Hanford Mills. Our records rarely say "worker X did Y job for Z hours." Instead, we have pieced together a framework of information from scattered references in business records and oral histories. So in this article, we would like to introduce you not to a specific worker, but to what we know about the mill's work environment.

If you were to walk into Hanford Mills and ask for a job, it would depend on the month and year you inquired. Early in the mill's history, from 1846 to about 1869, the business was purely a seasonal sawmill. Jobs may have been available in the spring months with high water, and sometimes in the fall when rainfall picked up again. When D.J. Hanford first owned the mill, he did not hire many men. Those who *were* hired worked a day or two, maybe a week, but not for the full spring season. It was the sort of job you got when you needed a little extra cash or a day to fill in between your farming chores. Later, as D.J. added a gristmill in 1869 and other woodworking machinery in 1876,

the mill remained open throughout the year. You might find a job at the mill anytime, but D.J. Hanford was still operating the business with a small staff.

It was not until about 1880, when he installed his first steam engine, that he could truly operate on a full-time basis. Job availability still varied seasonally. Timebook



In the Hanford Mills Museum photograph collection, there are only a few pictures of the men at work. The most common of these pictures show teamsters on the job.

records, which start in 1889, show more workers in the mill in the spring through early summer and in the fall. By 1898, the Hanfords had between seven and twelve employees each month. The only time there were consistently more workers were in the years 1901 to 1904, when the Hanfords experimented with making broom and tool handles. In those years, they had up to eighteen employees in a month. The large number of staff necessary for making handles is probably one reason the Hanfords stopped production. It was not cost efficient. By the 1910s, the Hanfords had settled to a steady eight to eleven employees a month. A few were full-time and stayed with the Hanfords many years.

Of course, if you asked D.J.

Hanford for a job, he would have to know your experience and skills. Most workers fell into the "laborer" category. They had enough skills to bang a box together, operate a woodworking machine, move stock, help maintain machinery and do odd jobs. They were not considered skilled labor. One special skill the Hanfords looked for was "teamster" - men who were good with horses and knew how to drive a wagon. The Hanfords' business owned horses, but often augmented their own teams by hiring a teamster with his own team of horses. Teamsters delivered Hanford products to customers and railway stations, picked up items sent by rail to the Hanfords and delivered farmers' milk to creameries. If you had

skills with steam engines, the mill might have a job opening for an engineer or fireman, though at times one man did the two jobs. The fireman job was the less skilled of the two. It was a fireman's position to feed fuel into the steam boiler. It was a hot and tiring job on a busy day. The engineer was in charge of the steam engine's operation. The engineer had to monitor the boiler's pressure, water level and condition constantly during operation. Shoddy care or operation could cause a boiler explosion. The Hanfords often paid engineers more than other workers. Another skilled, higher paying job was that of sawyer. There is more to sawing a log into boards than just running a blade through the wood. A good

Con't. on page 4

Worker's - con't. from page 3
sawyer could look at a log and envision the boards in it, getting the most from every piece of timber. Perhaps the highest paying full-time mill job was the bookkeeper's position. You were not likely to get this job, though, since Horace, D.J. Hanford's son, usually filled the position in the early years. Horace's nephew, Merritt Barnes, later filled the position.

Imagine D.J. Hanford has given you a job working in the mill. You might want to know what hours you were going to work. That would also depend on the year you sought employment. For most of the mill's history, the ten-hour day, six days a week, was the norm. The workday started at seven in the morning. With an hour-long break for lunch (most workers lived close enough to go home), the day ended at six in the evening. When they had a steam whistle, it was blown at five minutes to seven in the morning and five minutes to one after lunch. This warning allowed employees five minutes to make their way to the mill on time for work. On October 1, 1912, the state of New York passed a nine-hour workday labor law. Unfortunately, the Hanford timebook did not record hours, only days. We have no way of knowing if they complied with the law. The timebooks between 1917 and 1922 are missing. When they started a new timebook in 1922, it kept track of hours. We know that at least by that point, the workers at Hanford Mills were working nine-hour days, but still six days a week. It was not until the 1950s, after the Hanfords sold their mill, that an eight-hour work day became the

accepted practice.

Well, it seems that if you were going to work all those hours, the pay better be good. In the mill's early years, the pay was generous for the times. Workers usually received \$1 for a day's work. We have to glean early pay records from daily sales books, so tracking pay scales and work hours is difficult. It appears that D.J. Hanford paid a dollar a day for most work. Only milling experts and teamsters, those



The second most common worker photograph shows laborers out in the woods. In this case they are using a horse treadmill to make firewood.

who came to work with a team of horses, earned more. Compared with other work of the period, Hanford mill workers were well off. It was not until Horace Hanford joined his father's business in 1889 and helped him organize the book work that we see a differentiation in pay scale. Those workers with a specific skill, such as sawyer, engineer and mason received a dollar a day, while other laborers received eighty cents a day. By 1915, the bookkeeper was making \$2.50 a day, the sawyer was making \$2.00 and the rest of the mill workers were making \$1.50 a day. At various times in mill history, the Hanfords also paid the engineer at a higher rate than laborers, though never as high as the sawyer or bookkeeper. One

worker, George Oliver, worked for the Hanfords for at least twenty years, but a check of the time records shows that he did not get raises for seniority. They paid George Oliver the same amount as a new worker doing the same job. Older men (some worked in the mill in their 70s) and younger men (Horace's son worked in the mill in the summers between college) received less pay than middle-aged men. So the pay wasn't bad, but it wasn't good either.

What other kinds of "perks" would you get working at Hanford Mills? Unfortunately, they did not have many. The timebooks show that workers did receive the occasional paid holiday. They had no set paid holidays, but each year the Hanfords might give one or two. If a holiday fell on Sunday, though, forget about being paid. The favored holidays were Independence Day, Thanksgiving and Christmas. It was not unusual, though, to find men working in the mill on any one of the days mentioned above. Only longtime workers received a paid vacation, usually about a week long. By at least 1917, the Hanfords were paying for workers compensation insurance from the Lumber Mutual Casualty Insurance Company of New York. The company would pay out funds to injured mill workers. As an added "bonus," the Hanfords often paid a full-day's wages on the day a worker was injured, even if he did not work the whole day due to his injury. Luckily, most injuries in Hanford Mills were not life threatening. It

Con't. on page 5

Workers - con't. from page 4
 is also likely that the workers had unofficial perks. A worker may have been able come into the mill early or stay over lunch to do a little of their own woodworking or use the forge to repair a tool. Compared to the larger factories of the times, the Hanfords were generous and flexible in the benefits they could offer their employees.

After hearing about workers compensation and other perks, you probably would want to know what your work environment would be like. A hundred years ago, the mill was not the tidy workplace you see today. The Hanfords were processing thousands of board feet of lumber, thousands of pounds of feed, thousands of tool handles, hundreds of milk crates and lots of other products. You would find stacks of finished and unfinished products everywhere, inside and outside the mill. The mill had few barriers around machines or stairways. You had to be careful where you stepped or leaned. Still, the mill was probably safer than other larger, more industrial mills of the period. You have to remember, the bosses and owners, D.J., Horace and Will Hanford, were working

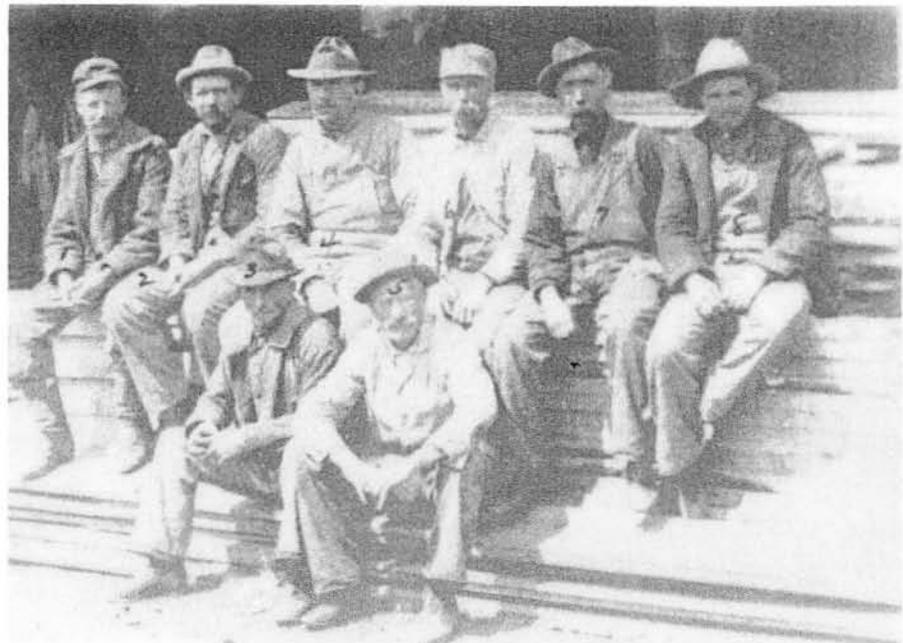
right along side the employees. Records show that by the 1920s, the government was making inspections for safety in the mill. They required guards around moving pulleys and the governor of the steam engine, and the steam boiler was inspected. They also required restroom facilities. Of course, standards were a little lower then. The mill had a "one-holer" out in the open in the basement over the tail race. Back then, there were not as many lights, and the basement was a rat infested black hole. So if you needed to use the "facilities," you could be relatively sure of it being private - at least in terms of human contact. One 1920s inspection reported that the Hanfords had to put in a bathroom for female employees. The Hanfords answered they had no female employees. The government returned if that were the case, then they did not need to add a second bathroom. Last of all, you should remember the mill was hot in the summer and cold in the winter. By the 1895 steam engine upgrade, the Hanfords were piping steam through the mill to heat it in the winter. Still, the building was not weather proof and had no insula-

tion. The sawmill section was impossible to heat. It was never as comfortable as many of today's workplaces, even industrial sites. Still, employees at Hanford Mills worked year round. That is one reason the water wheel is in the basement, where it is protected from snow buildup and water is taken from the pond below the level of the ice. There were only a few days noted in mill records when the thermometer reached below zero and mill workers did not have to come to work or were sent home.

In the end, if you could get a job at Hanford Mills one hundred years ago, you probably had a good deal. You would have a job close to home and you would be working with people you knew. The pay was respectable, the Hanfords were flexible to work with and, for the time, the benefits were pretty good. That does not mean it would have been an easy job or comfortable, and if you got hurt, the Hanfords would not and could not support you for life. Nevertheless, it would have been a very respectable place of employment.



Posed photographs, like this, of Hanford Mill Employees are rarer than work pictures. In the front, l. to r. are: Dan White and Levi Rifenburg. In the back, l. to r. are: Charles Palmer, James Hetherington, Arthur Hamilton (sawyer), William Van Alstine (engineer), Charles Hanford and Will Hetherington. Note that these men are seated on examples of their own work. This photo may have been taken about April, 1900. This was the only month all these men worked in the mill at the same time.



Power in the House

by Caroline de Marrais

In the 1920s, many family farmhouses were at a transitional point. They stood between the old-fashioned ways of the past and the modern methods of the twentieth century. This was especially true when examining the power available to do household jobs. The John Hanford Farmhouse is a good example of where people stood.

John Hanford, son of David Josiah (D.J.) Hanford, was not interested in the mill like his brothers, Horace and Will. Instead, when his father died in 1899, John took over the family farm. In 1909, he replaced his father's farmhouse with a modern home. The ways in which power was used in John's new home were different from what could have been done in the old house. Perhaps that is one reason that he chose to build a new house rather than renovate the old home. By the 1920s, the Hanfords had many power choices to make for their home. Hanford Mills Museum decided to restore the farmhouse to that period partially for this reason. What an exciting time it must have been, standing at the beginning of a new century with so many new possibilities laid before them! Let's examine how these new ways to use power affected the Hanford



Refrigerator

home.

When visitors enter John Hanford's Farmhouse, one of the most obvious power sources is electricity. Many historic house museums are from the period before electricity, so the restoration must hide its use. However, electricity was available to the Hanfords and so we do not have to hide our electric lights. The mill began producing direct current electricity in 1898 and provided it to East Meredith family homes.

This meant these early electrified homes had one or two light bulbs, but no outlets and probably no appliances. Evidence in the Hanford Farmhouse suggests that John's house may have had more than a light bulb or two, but not much more when it was first built in 1909. In the mid-1920s, two events helped determine the way the Hanfords electrified their house.

By 1926, an outside company electrified the entire village using alternating current. The Hanfords rewired their house to provide at least one light in every room and a few electrical outlets for appliances.

In 1925 the frosted light bulb was developed. People who bought the new bulbs often wished to show them off. Away

went the decorative glass shades and the bare bulbs were shown in all their glory. In place of shades on their living room and parlor chandeliers, the Hanfords attached specially made decorative collars to show off their *new* frosted bulbs. Visitors can see these bare bulb fixtures in the Hanford House living room and parlor.

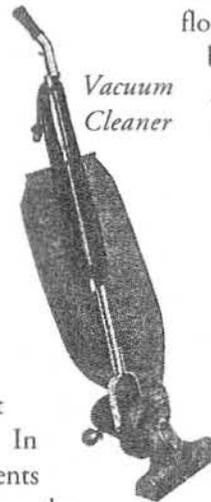
Did the Hanfords go crazy buying electric vacuum cleaners, waffle irons and refrigerators? No. Evidence suggests they had the following electrical appliances: a table lamp for the living room, a floor radio (although, it may have been battery powered), a washing machine, possibly a toaster and an electric refrigerator (but not until 1934). They continued to use their pneumatic, hand-pumped vacuum cleaner and Bissell carpet sweeper for carpet cleaning and went without most the electric kitchen appliances we consider necessary today. An examination of a 1921 catalog shows they also could have purchased electric heating pads, curling irons, chafing dishes, coffee pots, waffle

irons, radiators, irons, fans and grills. One obvious reason for not buying electrical appliances was the price. An electric waffle iron cost \$18. This does not sound bad for today, but if you compare it with the largest and best stove-top version for \$5, it makes a big difference. The difference in price is even more noticeable with vacuum cleaners. An electric upright machine cost \$39.50 (or

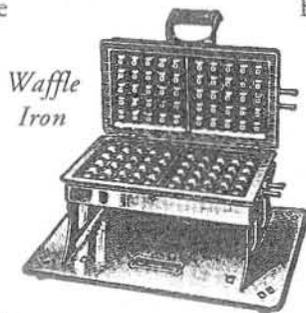
Con't. on page 7



Toaster



Vacuum Cleaner



Waffle Iron

House - con't. from page 6

\$50.00 with the attachments) while Bissell's top-of-the-line carpet sweeper cost \$9. Of course, an electric washing machine was an expensive investment, but its benefits were obvious in terms to time and effort saved. Why buy an electric vacuum cleaner when they were expensive and did not work well on your rugs? Why buy an electric coffee pot or waffle iron, when your stove did the job just fine?

Kitchen stoves today are often electric and such stoves were available in the 1920s, but the Hanfords stuck to the old-fashioned cooking methods. Their main stove was a coal-fired cookstove. Unlike today's stoves, these required some planning to make a meal. John's wife, Libbie, did not just start a fire first

thing in the morning and fry bacon and bake the morning's biscuits right away. The stove required time to heat once she started a fire. The oven could take an hour or so to heat to the proper temperature (from the time a fire was first



Kerosene Cookstove

started). Once she started the stove, Libbie usually kept the fire going throughout the day to maintain a good cooking temperature. It was not the best

type of stove for summer cooking. The Hanfords solved the problem by purchasing a kerosene cookstove. This type of stove had three burners, fed by a tank of kerosene. The burners could be turned on any time they were needed. It had no permanent oven, but they could use a specially made stove-top oven box that fit over a burner or two to do simple baking. Of course, that stove was not used all the time, especially in winter. This was because of the kerosene fumes, the inferior oven (as to heating and size) and it did not heat a room in winter as well as the big coal stove.

The kitchen stove was not the only source of heat in the house. Many visitors express surprise that they do not find heating stoves throughout the house. The Hanfords were modern in their

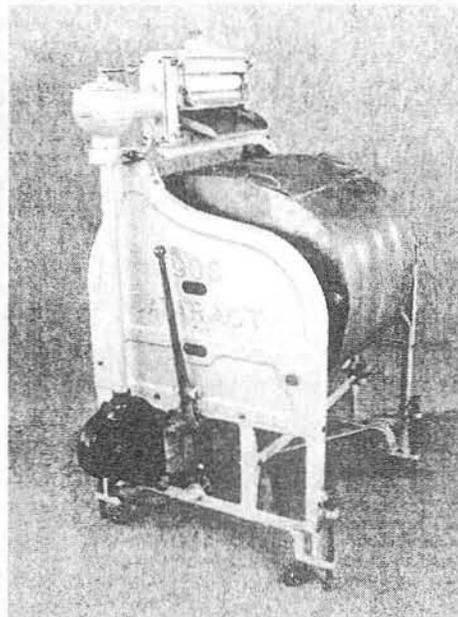
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The "1900" Washer Company

When John Hanford died in 1938, an inventory of his possessions was made. The "Wash Room" contents included "1 Electric Washing Machine - 1900 Washer." Unfortunately, the machine no longer exists. It was impossible to have an electric washing machine in the year 1900. Then we learned it was from the "Nineteen Hundred Washer Company" based in Binghamton, NY.

The "1900" Washer Company was making wooden tub, hand-operated washing machines as early as 1889 - advertising they "saved women's lives." By the 1910s, it was producing copper tub washing machines powered by an electric motor. In 1929, the Upton Machine Company of St. Joseph, Michigan merged with the "1900" Washer Company. The Upton Company had been producing electric washing machines since 1911. They made machines both in Benton Harbor, Michigan and Binghamton, New York, until the Binghamton factory closed in 1939. In 1950 the company became the Whirlpool Corporation, which is still headquartered in Benton Harbor, Michigan today.

We are unsure what model "1900" washer John Hanford's family purchased. The "1900" washer now on exhibit dates between 1917 and 1920. It may be earlier than the Hanford machine or they could have purchased a used machine. We will probably never know. If you would like to learn more about old washing machines, visit the Internet site of the Antique Washing Machine Museum at www.oldewash.com.



A "1900" Washer Company electric-powered washer similar to the machine at Hanford Mills Museum - c. 1920, "Cataract" model.



House - con't. from page 7

house construction. They installed a coal-fired furnace in the basement and heat vents throughout the house, except in the kitchen wing where the cookstove could heat those rooms. Most early farmhouses had low ceilings because heating large rooms was difficult and fuel was expensive or hard to obtain. John Hanford's high ceilings and large rooms show he did not have worries about heating his home. It probably helped that his brothers in the mill business also had coal to sell for heating.

Another item usually found in today's modern house basements next to the furnace is the electric or gas hot water heater. The Hanfords had neither, but they did not heat water *on* their stove. Instead, they had a water tank situated behind the kitchen stove. They fed water into the house from a spring high on a hill across the street. This way, they did not have to worry about pumping their water into the

house. The water went into the tank. Pipes from the tank then went *through* the stove's firebox, heating the water as it circulated. From there, they could pipe water to the kitchen sink or to the bathroom upstairs.

That is another thing - the

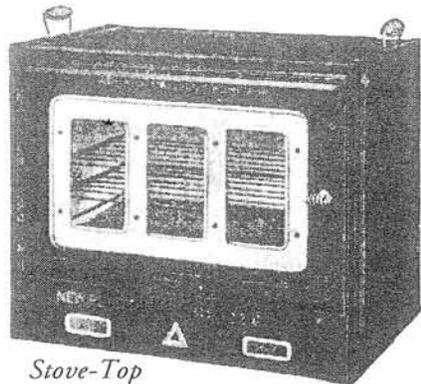
Hanford's bathroom also stood between the old-fashioned and modern worlds. It had no toilet, but there was the traditional outhouse in the backyard. This they set right near the creek with no worries of what might seep into the passing water. The indoor bathroom was literally just that, a room to take a bath in. It held a claw foot tub and possibly a sink. Hot water was supplied by the water tank below in the kitchen.

it is considered unusual today, single cylinder gasoline engines were used on many farms of the period. The main reason the Hanfords had an engine was for powering the milk pump used in the dairy barn, but instead of putting the engine in the barn, they installed it in the house's basement. This way John and his wife could also use it for other jobs. They may have run belts (like those used in the mill) through the basement window to a buzz saw in the backyard.

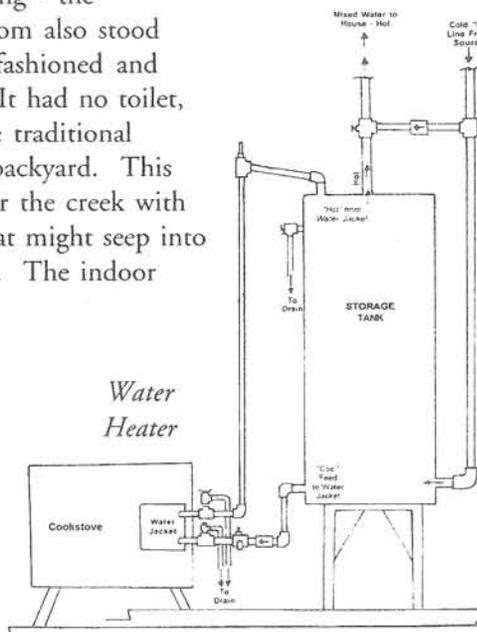
Many farmers in the 1920s had an engine in the basement to power a generator for electric lights for the house, because farms were often too far away from the power grid.

Today we show the John Hanford Farmhouse with all its 1920s back-

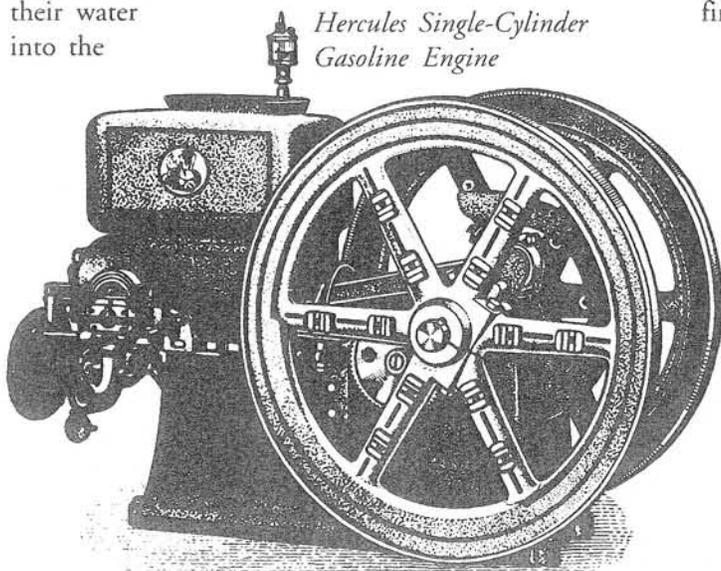
wardness and modern marvels. Would you feel comfortable living in John Hanford's Farmhouse? Possibly. Most anyone could survive in a 1920s home. It would certainly be easier than living in a colonial or pioneer home. Some readers already do or *have* lived comfortably with the technology that was available in the 1920s farmhouse. Others would find it difficult dealing with coal cookstoves and furnaces, and one electric light bulb in a bedroom would not be enough. Power makes all the difference in how we use a house, and the 1920s is an excellent period to illustrate these differences.



Stove-Top Oven



Water Heater



Hercules Single-Cylinder Gasoline Engine

There was one final and unusual form of power used in the John Hanford Farmhouse - a Hercules single-cylinder gasoline engine. Though



The Attrition Mill

by Robert Grassi

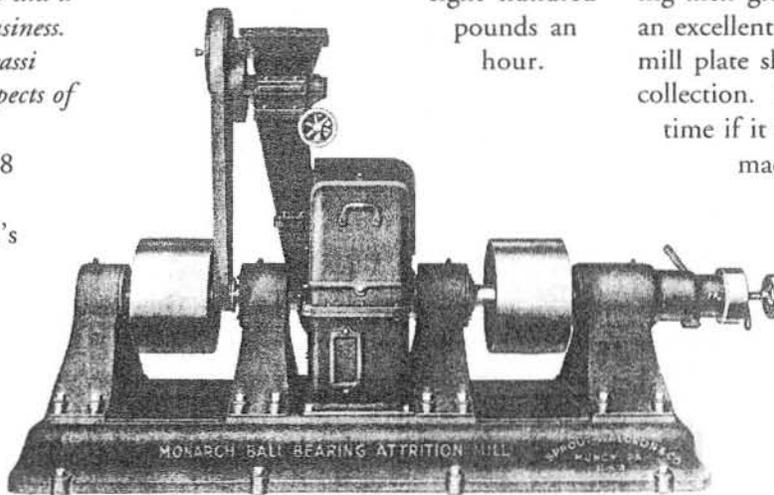
Editor's Note: Most of the machines demonstrated at Hanford Mills Museum are for woodworking, but that was just a part of the Hanford's entire business. They also did a lot of work in the feed business. In this article, Robert Grassi introduces you to some aspects of the gristmill business.

The summer of 1898 brought significant changes to the Hanford's gristmill. After almost thirty years of continuous service using a "portable" mill with millstones, they prepared for a major modernization.

On June 6, 1898, they purchased one hundred and ten feet of six-inch cotton belting, one hundred and ten Salem steel elevator buckets, two hundred bucket bolts and assorted shafting and bearings from the Fairbanks Company of Albany, New York. They also purchased, secondhand, from Morris Brothers of Oneonta, New York, a receiving separator (a grain cleaning machine) manufactured by Huntley, Cransom & Hammond of Silver Creek, New York. Their most significant purchase, however, was a twenty-inch "Monarch" attrition mill from Sprout, Waldron, & Company of Muncy, Pennsylvania.

First developed in the 1880's, attrition mills were rapid and efficient grinding machines. They were quickly adopted and used in many grain mills, primarily for the production of feed. Utilizing a number of machined cast iron plates bolted to two steel vertical discs, a twenty-inch machine could easily grind more than two thou-

sand pounds of finished product an hour. The Hanford's thirty two-inch millstone mill, installed in 1869, could average only six to eight hundred pounds an hour.



A Sprout, Waldron & Company Attrition Mill

In an attrition mill, the grain is conveyed through a hopper and shoe on the machine. It falls into the center of the two discs, each spinning in opposite directions at a high rate of speed. The mill's present twenty two-inch model was rated for 1750 revolutions per minute. Once in the machine, the grain is ground between the plates and the centrifugal force throws it to the outside. The surrounding cast-iron case catches and conveys the ground grain through a chute to the cup elevators. We can tenter, or adjust the spacing between the discs, with a hand wheel on the machine. Exactly like its millstone counterpart, the consistency of the finished product is a direct result of three factors: the rate of grain fed into the mill, the speed of the mill and the distance between the discs/plates.

The only routine maintenance required for the metal grinding plates is periodic sharpening, which

is known as dressing of the face. This process requires the removal of the plates by unbolting them from their respective discs and machining their grinding faces. We have an excellent example of an attrition mill plate sharpener in our museum collection. It is unknown at this time if it was an original Hanford machine or if Ken Kelso,

the first museum owner, purchased it for the museum. The Hanford's first millstone mill needed periodic dressing or sharpening as well. This process required at least a full ten-hour work day to be completed by a

skilled millstone dresser. With a spare set of dressed plates on hand, it would take an unskilled mechanic less than an hour to change plates on an attrition mill. Considering the many advantages the attrition mill had over the millstone mill, there is no question why the Hanfords purchased their attrition mill.

The Hanfords were most likely influenced in their purchase choice by their friend and colleague, N. L. Greene of Edmeston, New York, who was known as a millwright, machinist and founder. They purchased their first attrition mill on June 24, 1898. After only a few weeks of service, the Hanfords were greatly disappointed with its performance. They wrote the manufacturer and N.L. Greene looking for answers. N. L. Greene as a millwright, who represented Sprout, Waldron and Company, had installed several attrition mills

Con't. on page 10

Mill - con't. from page 9

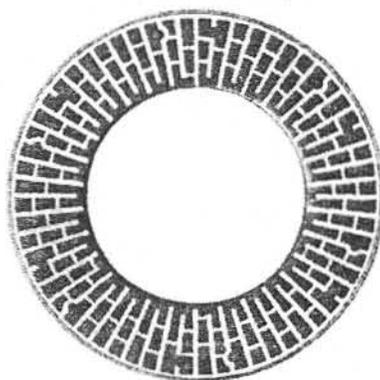
in gristmills throughout our area. We are unclear whether he was directly involved in the Hanford attrition mill installation or just assisted them. Regardless, he was present at the installation and was under the impression the Hanfords were satisfied with the new mill's operation. Apparently, the Hanfords were having trouble with the mill clogging while grinding certain mixed feeds. Mr. Green answered the Hanfords. He seemed surprised and could offer no explanation. He offered to stop in for a first hand examination. Sprout, Waldron and Company also could not determine the cause of the problems, so they decided to replace the mill with a new one at no additional charge. Before N.L. Greene could make it to the Hanfords' mill, they received a new attrition mill and set it into operation September of 1898. The Hanfords were apparently pleased with this mill's performance, as is evident from a letter written by the Hanfords to Sprout, Waldron and Company on February 5, 1902. They wrote,

the 20" Monarch Attrition Mill which we purchased of you in September 1898 is still giving splendid satisfaction. We have ground 1000 pounds of corn into fine meal in twelve minutes which proves that the mill is a rapid grinder. As to quality of work performed would say that we are taking business away from the stone mills as they can not compete with the "Monarch" on corn and cob. We most heartily recommend the "Monarch" to anyone wanting a first class grinding machine.

We can only assume that this mill continued to perform well, for it was in operation until December of 1912. At that time, it was replaced by a slightly larger twenty

two-inch ball bearing, instead of babbitt bearing, attrition mill manufactured by the same company. Why replace their fourteen-year-old, twenty-inch mill for a new twenty two-inch mill? Certainly there was not a dramatic difference in output capacities between the two to warrant the purchase price of \$635. Perhaps their twenty-inch mill began to give them trouble or they were convinced through an advertisement of the advantages of ball bearings over babbitt bearings. Sprout, Waldron and Company claimed an overall savings of 30 to 40% in power and 90% in lubricant, using ball over babbitt bearings. Whatever their reasons, they commercially operated the twenty two-inch mill, still in its original location, for nearly forty years. Today we operate this very mill on special events to demonstrate the grinding process of an attrition mill.

When one considers the importance of the feed component to the Hanfords' overall business, it made



This illustration shows how the grinding plates were attached to the discs.

plain good sense to upgrade their gristmill in 1898, purchasing an attrition mill. Farmers were taking on larger dairy herds and the need for feed was on the rise. Looking back into the business records, the feed business was certainly the most profitable business venture in the mill's history. From 1869 to

1965, nearly every business day has a record of the sale of feed and flour, though that is less frequent. The Hanfords derived the majority of their feed business from the wholesale purchase of grains and flours from larger mills only to be resold retail to the customers at their mill. It is interesting to note that during the early period of the gristmill's operation, most wholesale purchases were from several local mills in Oneonta, New York. Later purchases, after the Ulster and Delaware Railroad was constructed through East Meredith in 1900, included railcar loads from the Midwest. Frequently, the feed grains were further processed by mixing and/or grinding at the gristmill before sale to the customer. Wheat flours were purchased and resold as is. The only flour for human consumption that the Hanfords produced on their own mill was the then popular buckwheat flour. It was only custom ground for farmers on an individual basis. A smaller, but equally important part of the feed business, included the custom grinding service. Many local farmers brought their own grain to be ground on the Hanfords' millstone mill, and later their attrition mill. They charged them according to the type of grain, a nominal fee per bushel for the service. After purchasing the business from Horace Hanford in 1945, the Pizza Brothers continued the feed business as it was, but took it even a step further. They converted the Hanford's warehouse next to the mill complex and the rail line into a modern feed mill in the late 1950's. This was primarily to compete with the rising bulk feed market then taking over this area. The conversion was not enough to keep the Pizzas in business.

Con't. on page 12

Fruit Cakes

In the last *Millwork* newsletter, we introduced a Corn Bread recipe from Elizabeth Hanford's 1866 diary. It was a fairly simple recipe (or receipt as they were called then). Below you will find two more recipes from her 1866 diary. Since it is the holiday season, we thought Fruit Cake would be appropriate. These recipes are for the brave at heart or the experienced cook. On the left we have reproduced an enlarged copy of the original. In the center column we have

included a transcription. On the right are some notes. How you bake it is for you to discover.

Original

Fruit Cake
 2 cups Shugar
 1 buter
 3 flour 4 Eggs
 1/2 lb Currant
 1/2 Raisins 1 teasp
 Cream tartar 1 Soda

Nº2 Fruit Cake
 1 lb Currants 1
 of Raisins 1 of
 Citron 1 of Shugar
 1 of Butter Cinnam^{on}
 cloves nutmeg to the
 taste 1/2 tumbler brand
 5 eggs 1/2 cup Molasses
 1/2 cup of sour Cream
 1/2 table spoon soda

Transcription

Fruit Cake
 2 cups Shugar
 1 buter
 3 flour 4 Eggs
 1/2 lb Currant
 1/2 Raisins 1 teasp
 Cream tartar 1 Soda

Notes

Sugar, butter & flour appear to be measured in cups. Currants & raisins are measured in pounds. "Cream tartar" is Cream of Tartar.

Nº2 Fruit Cake

1 lb Currants 1
 of Raisins 1 of
 Citron 1 of Shugar
 1 of Butter Cinnam^{on}
 cloves nutmeg to the
 taste 1/2 tumbler brand
 5 eggs 1/2 cup Molasses
 1/2 cup of sour Cream
 1/2 table spoon soda

Notice this recipe has no flour. The writer most likely knew it had flour & she knew what it looked like so she did not have to write an amount. "Brand" refers to brandy and "sour Cream" is likely soured cream like you might sour milk with lemon or vinegar rather than today's modern sour cream. Note the first measurements are in pounds.

Hanford Mills Museum's 2001 Annual Appeal

Return to P.O. Box 99, East Meredith, NY 13757
 or include with your returned survey

Name: _____

Address/Zip: _____

Phone/E-Mail: _____

I would like my gift to support:

- Operating & Project Fund
- Endowment Fund
- Steam Project
- The Fund it will help the most

Choose a "Thank You" Gift:

- East Meredith Memories*
(Selected stories from the museum's oral history tapes)
- The Hanford Photographs*
(Historic photos from the museum's archives)
- Catskill Folks*
(Portraits in traditional wisdom and craftsmanship)
- An Agricultural Legacy: Farm Outbuildings of Central New York*

- New
- Renewal
- Gift

Telephone: _____

Address: _____

Name: _____

Yes! I want to become a member of Hanford Mills Museum.

Individual \$15

Joint \$20

Family \$25
(2 adults &

children under 18)

* Mail to Hanford Mills Museum or return with survey.



DON'T FORGET! -
Winter Ice Harvest
Sat., Feb. 2, 2002

Mill - con't. from page 10

Next to the sawmill, the gristmill was the longest continuously operating portion of the mill business throughout its one hundred and nineteen year commercial life. Unfortunately, as a museum, we are not able to demonstrate the gristmill as often as the woodworking portions of the mill. While we are able to use our lumber products, we have no need for animal feed. Today, farmers want scientifically pre-mixed feeds and they want them in bulk. Most of our visitors are not interested in purchasing feed at a museum. Hanford Mills Museum does still demonstrate the gristmill occasionally during special events. If you are interested in seeing the mill run, please call and we may be able to tell you the next date it will be in operation.

What's News - con't. from page 1

white oak. White oak, which can often last as long as pressure treated lumber, was a preferred building material for mill water power systems.

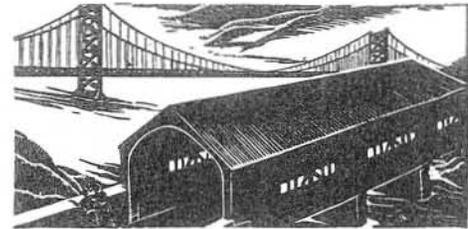
Mr. Kricker is a nationally renowned millwright, known for mill restorations throughout the United States. He has often worked with Hanford Mills Museum. In the past, he has restored the mill's water wheel, relaid stone walls in the tail race and installed new supports for the water wheel. The headgate regulates the water entering the mill pond. It can be opened to let water into the pond, or in a flooding situation, it can be closed to keep water out. With the work James Kricker has done, Hanford Mills Museum will be able to control its mill pond for at least another thirty years or more.

Our next step will be to dredge the accumulation of years of sediment from the pond bed. As the pond takes in water to power the mill, sediment is carried in as well. Over the years, the level of sediment builds up until it needs to be removed. This will be the museum's next step.

County Route 12 Bridge -

If you visited the mill this summer, you may have noticed the detour signs near the mill.

The county highway bridge just east of the museum was out all summer as contractors replaced the old, deteriorating bridge. Unfortunately, many visitors found the detour signs confusing and got lost. Hopefully, they all eventually found their way here. But if you are planning a trip to Hanford Mills Museum for our Winter Ice Harvest, have no fears. The bridge was completed in November and is now open for traffic again!



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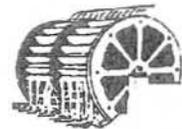
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